

T. J. MARCH.  
COOKING RANGE.

No. 182,587

Patented Sept. 26, 1876.

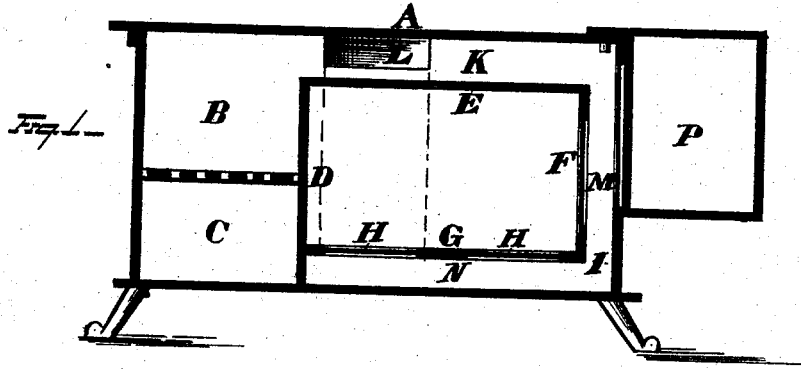


Fig. 2 -

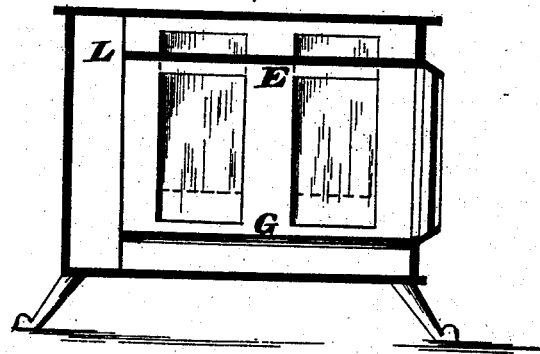
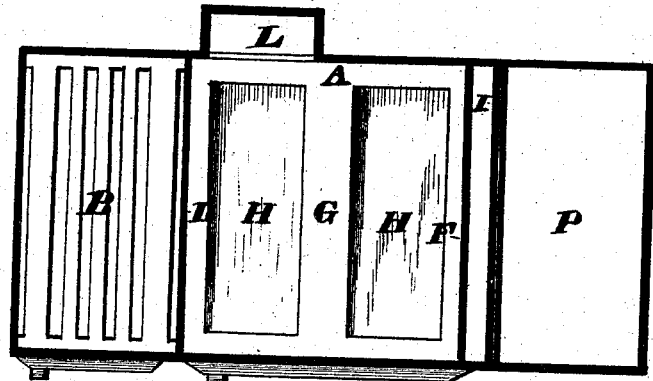


Fig. 3 -



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN COOKING-RANGES.

Specification forming part of Letters Patent No. 182,587, dated September 26, 1876; application filed July 24, 1876.

### *To all whom it may concern:*

Be it known that I, THOMAS JEFFERSON MARCH, of Limerick Station, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Cooking-Ranges; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to cook-stoves or ranges, having for its object a construction of same which will permit of utilizing heat in warming the oven, which has heretofore been passed into the exit-flue and wasted. It consists, first, in providing the oven with a bottom plate having sheets of mica, which serve to radiate into same heat conducted beneath the plate by a base-flue connecting with the exit by an intermediate flue; second, in the side plate of the oven, likewise provided with laminæ of mica, in combination with a flue connecting respectively the upper and lower flues of the stove, whereby the passing volume of heat the more directly enters and affects the oven; third, in the exterior side of the stove, constructed with openings in the metal, in which are introduced corresponding sheets of mica, in combination with a reservoir or other heating-chamber attached to said side of the stove, by which means the moving particles of heated air warm the heating attachment better than if its adjacent side of the stove was a solid metal plate; fourth, in the combination, with the metallic mica-plated oven, of flues surrounding said oven.

Referring to the drawings, Figure 1 is a longitudinal section; Fig. 2 a cross-section, showing, in side elevation, the interior end of the stove next to the heating attachment, while Fig. 3 is a plan of the oven with the top plate removed.

A is the stove or range, of any suitable construction and arrangement of parts, in which B is the fire-chamber, and C the ash-pit, both of which are separated from the oven by a close partition, D, extending from the bottom of the ash-pit up to the top of the oven, where it forms a tight joint with the top plate E of

the oven. This top plate unites in a similar manner to the opposite end plate F of the oven, which latter plate is continued down to meet the bottom plate G. This last plate G forms the close bottom support of the oven, and is of similar dimension to the top plate, but differs from same in having one, two, or any number of mica plates, H, placed in, over, or in any suitable manner secured to the plate, so as to cover corresponding openings formed in said plate. Both the bottom plates G, the side plate F, and the exterior side plate I of the stove, opposite the fire end, are provided with mica plates or their laminæ of same material, cut in suitable sheets, and adapted to each respective opening or openings in said plates of the stove or range. These sheets of mica may be secured to each plate, so as to be wholly within the sectional dimensions of same, or they may be on the out or in side of the plate, and they may be loosely attached to the plates, so as to be adjustable, or they may be rigidly attached. So they may be in any number of separate sections from one indefinitely into higher numbers, and they may be independent of dependent relative to one another; neither is their use confined to the bottom and side plates, but the rear or other portions of the oven may also be supplied with such mica sheets. K is the top flue, having immediate connection with the rear exit-flue L, which latter extends to the bottom of the stove or range, where it connects directly with the base-flue. This flue K continues over the top surface of the oven, intermediate same and the exterior cover or top of the stove, forming a full passage for the products of combustion to be conducted into the side flue M, intermediate the exterior stove side and interior oven side opposite to the fire-chamber end. This latter flue also freely connects with the base-flue N, extending beneath the bottom plate of the oven, which, in turn, has immediate vent into the final exit-flue L.

Suitably secured to the side of the stove farthest from the fire-chamber is the reservoir, or other heating attachment P, of design immaterial to my invention, but the side of the stove or range against which same is secured is provided with one or more openings in its metallic body, which are closed or covered by

the mica pieces just described, and which serve to heat the reservoir the quicker and easier than if the intervening exterior side of the stove was a solid metal piece.

It will be understood that I do not restrict myself to the arrangement or construction of the mica radiating pieces, as here shown, or to the specific formation of the openings or apertures in the metal body plates, to which said radiating pieces correspond, since any number, size, or design of openings may be used, and the mica pieces adapted to closely cover same. It is further apparent that the rear or other portion of the oven may also be provided with an interior plate, forming in itself a partition between the oven and the corresponding part of the stove, while an intermediate air-flue is also thus obtained, which may connect with the other flues, as desired, said division-plate having mica radiating pieces closing openings in same, as described for the former-mentioned plates.

The well-known heat-radiating quality of mica is thus utilized in combining oven-plates, having openings or apertures covered by same, with hot-air flues connecting the fire-chamber with the final exit-flue, whereby the products of combustion traversing said flues can impart their vibrating and heat-producing movement the more directly to the contained air of the oven. Thus the gaseous products of the fire-chamber ascend over and along the top of the oven through flue K into the side flue M, where the gas passes between the two end plates respectively of the oven and the stove proper, which plates are each provided with mica radiating pieces, which serve to more easily heat the oven on the one hand and the reservoir on the other hand, after traversing which flue M the gas is introduced by base-flue N along the bottom of the oven, and here further increases the temperature of this latter by means of the radiating strips of mica in the bottom plate of same. The gas is finally discharged into the base of the rear exit-flue by suitable connection, though it is also understood that there is a draft directly from the top flue into the rear flue by immediate

connection therewith, which can allow of much of the gaseous products at once passing into the exit-flue, while the remaining portion is conducted down and about the oven by the other flues. This immediate connection of the top flue with the final exit may be adjusted by a damper, so as to regulate the quantity of heated air and smoke passing directly from the fire-chamber into said rear flue, and this damper may close the passage-way entirely, so as to throw all the products of combustion into circulating flues about the oven.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the flue of a cook stove or range, of an interior oven-plate, constructed with one or more heat-radiating sections of mica, substantially as and for the purpose described.

2. The combination, with the metallic mica-plated oven, of flues surrounding said oven, substantially as and for the purpose described.

3. In a cook stove or range, the combination, with a base flue, of the bottom oven-plate, provided with one or more mica-covered openings, substantially as and for the purpose described.

4. The combination, with the side of a cook-oven, provided with heat-radiating sheets of mica, of the flue connecting the top and bottom oven-flues, substantially as and for the purpose described.

5. The combination, with the interior oven-plate and outer side plate of a cook stove or range, both said plates provided with mica sections and having an intermediate heating-flue, of a reservoir or other heating attachment secured to the stove or range, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of July, 1876.

THOMAS J. MARCH.

Witnesses:

T. L. HITCHCOCK,  
J. R. GOODENOUGH.